

SYMPOSIUM PROGRAM

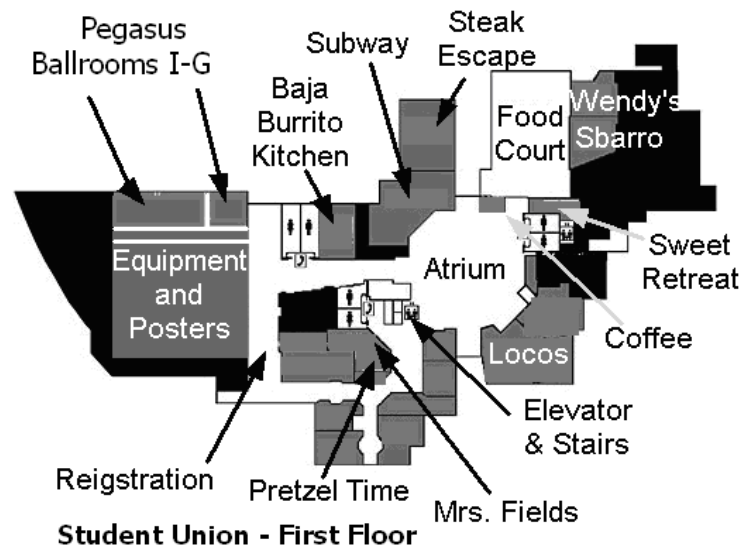
Monday, March 4, 2013

7:30-5:00	Registration <u>Coordinator:</u> Tasker Beal, Jr., Constellation Technology	Registration Desk
7:30-9:00	Breakfast	Pegasus Ballroom A-F
7:30-10:30	Student Poster Setup <u>Coordinator:</u> Ying Zheng, NanoPhotonica, Inc	Pegasus Ballroom A-F
7:30-10:30	Equipment Exhibit Setup <u>Coordinators:</u> Helge Heinrich, University of Central Florida Mark Davidson, University of Florida	Pegasus Ballroom A-F
8:00-5:00	Technical Program	Pegasus Ballroom G-H
5:00-7:00	Poster Session	Pegasus Ballroom A-F
5:00-7:00	Reception (sponsored by <u>Physical Electronics, Inc</u>)	Pegasus Ballroom A-F

Tuesday, March 5, 2013

8:00-12:00	Registration <u>Coordinator:</u> Tasker Beal, Jr., Constellation Technology	Registration Desk
8:00-9:00	Breakfast	Pegasus Ballroom A-F
8:00-9:00	Poster Session	Pegasus Ballroom A-F
9:00-4:10	Technical Program	Pegasus Ballroom G-H
4:10-5:00	Poster Award Ceremony	Pegasus Ballroom G-H

(View abstracts for oral and posters presentations at www.flavs.org)



Student Union closes at 7 pm
Parking is available in Garage D

MONDAY, MARCH 4, 2013

OPENING AND KEYNOTE ADDRESS

Pegasus Ballroom G-H

- 8:00 am** **Welcome and Introduction**
Program Chair: Swadeshmukul Santra, Department of Chemistry and Burnett School of Biomedical Sciences, University of Central Florida
- 8:05 am** **Keynote Address**
A Retrospective of Two Decades with AVS
(Invited), Alison A. Baski, Virginia Commonwealth University, 2012 AVS President

MICROSCOPY IN THE BIOLOGICAL AND PHYSICAL SCIENCES/FIB

Pegasus Ballroom G-H

Chairs: Xiao (Sheryl) Li, University of South Florida
 Lucille Giannuzzi, Giannuzzi & Associates

- 9:00 am** **Imaging Nanomaterials in Biophysical and Medical Applications**
(Invited) Geoffrey F. Strouse, Florida State University
- 9:25 am** **Fundamentals of Cryogenic FIB-SEM and Case Studies**
(Invited) Nicholas Antoniou, Center for Nanoscale Systems, Harvard University
- 9:50 am** **Applications of Advanced Characterization Techniques on Nuclear Materials Researches**
(Invited) Yong Yang¹, and George (Zhijie) Jiao², ¹Nuclear Engineering Program, Materials Science and Engineering Department, University of Florida, ²Nuclear Engineering and Radiological Sciences, University of Michigan
- 10:15 am** **Coffee Break (sponsored by RBD Instruments, Inc)**

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

10:00am-7:00pm

CHARACTERIZATION OF NANO/BIO MATERIALS

Pegasus Ballroom G-H

Chairs: Chairs: Jennifer Andrew, University of Florida
Joong-Ho Moon, Florida International University

- 10:45 am** **Microscopic and Spectroscopic Studies of Bioadhesive Interfaces**
(Invited) Kathryn J. Wahl¹, Daniel K. Burden², Daniel E. Barlow¹, Christopher M. Spillmann³, Richard K. Everett⁴ and Daniel Rittshcof⁵, ¹Chemistry Division, US Naval Research Laboratory, ²NRL NRC, US Naval Research Laboratory, ³Center for Biomolecular Science and Engineering, US Naval Research Laboratory, ⁴Materials Science & Technology Division, US Naval Research Laboratory, ⁵Duke University Marine Laboratory
- 11:10 am** **Multi-probe Imaging Alternatives for Mass Spectrometry based Bio-Imaging**
(Invited) Francisco Fernandez Lima, Department of Chemistry and Biochemistry, Florida International University
- 11:35 am** **Nanoscale Thermal Effects due to Magnetic Nanoparticles: Fact or Fiction?**
(Invited) Carlos Rinaldi, J. Crayton Pruitt Family Department of Biomedical Engineering and Department of Chemical Engineering, University of Florida
- 12:00 pm** **Lunch Break**

SURFACE SCIENCE

Pegasus Ballroom G-H

Chair: Wei David Wei, University of Florida

- 1:20 pm** **Surface of Perovskite Manganites and Beyond**
(Invited) Zheng Gai, Materials Science and Technology Division and Center for Nanophase Materials Sciences Division, Oak Ridge National Lab
- 1:45 pm** **Towards Organic Electronics: Methods for the Selective Deposition of Semiconducting and Metallic Nano-Objects**
(Invited) Jing Yang, Zhiwei Shi, Katherine Borner, Amy V. Walker, Department of Materials Science and Engineering, University of Texas-Dallas
- 2:10 pm** **Characterization of Palladium Oxide Catalysts Supported on Nanoparticle Oxides**
(Invited) Helena E. Hagelin-Weaver, Justin J. Dodson, Luke M. Neal, Department of Chemical Engineering, University of Florida
- 2:35 pm** **Metal Oxide Surface Chemistry and Photoluminescence**
(Invited) James E. Whitten, Department of Chemistry, University of Massachusetts Lowell
- 3:00 pm** **Coffee Break (sponsored by R. D. Mathis Company)**

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

10:00am-7:00pm

YOUNG LEADERS SESSION

Pegasus Ballroom G-H

Chairs: John Mudrick, University of Florida

Andrew Teblum, University of Central Florida

- 3:30 pm** **Simulation of Nanosize Atomistic Models of Cerium Oxide to Decipher the Role of Redox State on its Irradiation Behavior**
Amit Kumar¹, Ram Devanathan², Sudipta Seal^{1,3}, ¹Materials Science and Engineering, University of Central Florida, ²Fundamental and Computational Science Division, Pacific Northwest National Laboratory, ³NanoScience Technology Centre, University of Central Florida
- 3:45 pm** **Surface Plasmon Mediated Chemical Solution Deposition of Gold Nanoparticles at Room Temperature**
Jingjing Qiu, Yung-Chien Wu, Yi-Chung Wang, Lisa McElwee-White and Wei David Wei*, Department of Chemistry and Center for Nanostructured Electronic Materials, University of Florida
- 4:00 pm** **Oxide/Metal/Oxide Trilayer - A Transparent Electrode in Optoelectronic Devices**
Weiran Cao and Jiangeng Xue, Department of Materials Science and Engineering, University of Florida
- 4:15 pm** **Optical Nonlinearity in Nanomaterials**
Panit Chantharasupawong†, Reji Philip*, Jayan Thomas*,§,†, † College of Optics and Photonics, CREOL, * NanoScience Technology Center, § Department of Material Science and Engineering, University of Central Florida
- 4:30 pm** **Homoepitaxial Growth of High Quality ZnO Thin Films**
Ming Wei, R. Casey Boutwell, Winston V. Schoenfeld, CREOL, The College of Optics and Photonics, University of Central Florida
- 4:45 pm** **Success Skills for Science Careers - Perspective from Small Business**
Bernd Liesenfeld, President, Quick-Med Technologies, Inc., Gainesville, FL

POSTER SESSION AND RECEPTION

Pegasus Ballroom A-F

- 5:00 pm** **Poster Session**
Chair: Ying Zheng, NanoPhotonica, Inc., Gainesville, FL
- 5:00 pm** **Reception (sponsored by Physical Electronics, Inc)**

Student Union closes at 7 pm

Vendors and Equipment Exhibit

Pegasus Ballroom A-F

10:00am-7:00pm

TUESDAY, MARCH 5, 2013

8:00 am

POSTER SESSION

Pegasus Ballroom A-F

Chair: Ying Zheng, NanoPhotonica, Inc., Gainesville, FL

RENEWABLE ENERGY

Pegasus Ballroom G-H

Chairs: Neelkanth Dhere, Florida Solar Energy Center, University of Central Florida
Tim Anderson, Florida Program for Alternative Energies, University of Florida

9:00 am

Bio Back Sheet - A PV Back Sheet Produced from Totally Sustainable Resources
(Invited) Stan Levy, BioSolar, Inc.

9:25 am

Concentrating Sunlight without Tracking the Sun
(Invited) Chris Giebink, Department of Electrical Engineering, Penn State University

9:50 am

Multi-Functional APCVD Oxide Films for c-Si Solar Cells
(Invited) Kristopher O. Davis^{1,2}, Kaiyun Jiang³, Carsten Demberger³, Heiko Zunft³, Dirk Habermann³, Winston V. Schoenfeld^{1,2}, ¹Florida Solar Energy Center, University of Central Florida, ²CREOL, College of Optics and Photonics, University of Central Florida, ³Technology Center Schmid, Gebr. Schmid GmbH + Co., Germany

10:15 am

Coffee Break (sponsored by VAT, Inc)

THIN FILMS

Pegasus Ballroom G-H

Chairs: Jiangeng Xue, University of Florida
Mei Zhang, Florida State University

10:45 am

Conjugated Polymer/Carbon Nanotube Composites
(Invited) Lei Zhai, NanoScience Technology Center and Department of Chemistry, University of Central Florida

11:10 am

Solution-Processed Quantum-Dot Light-Emitting Diodes with High Efficiency and Long Lifetime
(Invited) Yixing Yang¹, Ying Zheng¹, Lei Qian¹, Alexandre Titov¹, Jake Hyvonen¹, Weiran Cao², Jiangeng Xue² and Paul H. Holloway^{1,2}, ¹NanoPhotonica, Inc., Gainesville, FL 32601, ²Department of Materials Science and Engineering, University of Florida

11:35 am

A Spectroscopic Gauge to Measure Charge Transfer in π -Conjugated Polymers/Quantum Dots Nanocomposites
(Invited) Xiaomei Jiang, University of South Florida

Vendors and Equipment Exhibit
Pegasus Ballroom A-F
8:00am-1:00pm

12:00 pm Lunch Break and Door Prize Drawing (Pegasus Ballroom A-F)

NANOELECTRONICS/NANOPHOTONICS

Pegasus Ballroom G-H

Chair: Jayan Thomas, University of Central Florida

1:20 pm **Optical Nanostructures for Enhanced Light-Matter Interactions and Energy Harvesting**
(Invited) Debashis Chanda, NanoScience Technology Center/CREOL, University of Central Florida

1:45 pm **Self-Assembled Self-Cleaning Broadband Antireflection Coatings**
(Invited) Peng Jiang, Department of Chemical Engineering, University of Florida

2:10 pm **Nanoscale Control of Plasmon Resonances for Thermally Stable Biosensing Platforms**
(Invited) Chatdanai Lumdee, Seyfollah Toroghi, and Pieter Kik, CREOL, University of Central Florida

2:35 pm Coffee Break

ADVANCES IN INSTRUMENTATION

Pegasus Ballroom G-H

Chair: Mark Davidson, University of Florida

2:55 pm **The Application of High Energy Monochromatic X-Rays (Ag L α) to the XPS Analysis of Near Surface Regions**
(Invited) David Surman¹, Jonathan Counsell² and Adam Roberts², ¹Kratos Analytical Inc., NY, USA. Ph: 845-426-6700, Email: dsurman@kratos.com, ²Kratos Analytical Ltd., Manchester, UK

3:20 pm **Advanced Depth Profiling Characterization of Mixed Organic/Inorganic Multilayer Devices Using X-Ray Photoelectron Spectroscopy (XPS) and a Combined Monatomic and Gas Cluster Argon Ion Source**
(Invited) Richard G. White¹, Tim S. Nunney¹, Paul Mack¹, and Brian R. Strohmeier², ¹Thermo Fisher Scientific, West Sussex, UK, ²Thermo Fisher Scientific, Madison, WI, USA, brian.strohmeier@thermofisher.com

SPECIAL EVENTS

4:10 pm **Student Poster Session Awards Ceremony - Pegasus Ballroom G-H**
Program Chair: Swadeshmukul Santra, Department of Chemistry and Burnett School of Biomedical Sciences, University of Central Florida
Poster Session Chair: Ying Zheng, NanoPhotonica, Inc., Gainesville, FL

Vendors and Equipment Exhibit
Pegasus Ballroom A-F
8:00am-1:00pm